

CLAIMS

1. An apparatus for sampling microbial organisms present on surfaces, comprising:
a reservoir suitable for providing microbial collection fluid;
a sterilizable sample collection chamber;
5 a sterilizable, integrated collection fluid delivery and collection fluid recovery member,
suitable to deliver collection fluid to a target surface, and contemporaneously recover the
delivered fluid from the surface;
delivery means, in communication with both the reservoir and the integrated member,
and operable to aseptically deliver collection fluid from the reservoir to the integrated member;
10 and
vacuum means, in communication with both the sample collection chamber and the
integrated member, and operable to direct collection fluid, delivered and recovered by the
integrated member, to the sample collection chamber.
2. The apparatus of claim 1, wherein the integrated fluid delivery and recovery
15 member is reversibly detachable.
3. The apparatus of claim 1, wherein the reservoir is a pressurizable chamber.
4. The apparatus of claim 1, wherein the reservoir is a pressurizable chamber, and
wherein the delivery means comprises a compressor in communication with the chamber.
5. The apparatus of claim 1, wherein the delivery means comprises a fluid pump.
- 20 6. The apparatus of claim 1, wherein the vacuum means comprises a vacuum pump,
and a moisture trap interposed between the sample collection chamber and the vacuum pump.
7. The apparatus of claim 1, wherein the integrated collection fluid delivery and
collection fluid recovery member, comprises a spray nozzle suitable to direct sample collection
fluid toward the target surface.
- 25 8. The apparatus of claim 1, wherein the integrated collection fluid delivery and
collection fluid recovery member comprises a actuatable valve for actuated delivery of the
sample collection fluid.
9. The apparatus of claim 1, further comprising a sanitizing means for sanitizing the
integrated collection fluid delivery and collection fluid recovery member.

10. The apparatus of claim 9, wherein the sanitation means comprises a sanitation unit having a sanitizing reservoir for receiving the integrated collection fluid delivery and collection fluid recovery member.

11. The apparatus of claim 1, wherein the integrated collection fluid delivery and
5 collection fluid recovery member conforms to the target surface contour.

12. The apparatus of claim 1, wherein the shape or size of the integrated collection fluid delivery and collection fluid recovery member is calibrated to facilitate sample collection
10 from a predetermined target surface area.

13. A method for rapid, high-throughput sampling of microbial organisms present on
10 surfaces, comprising:

delivering sample collection fluid to a target surface, and contemporaneously recovering the delivered fluid from the target surface by means of an integrated collection fluid delivery and collection fluid recovery member; and

collecting the recovered sample collection fluid into a sample collection chamber in
15 communication with the integrated member, whereby sample collection is, at least in part, achieved.

14. The method of claim 13, wherein the target surface is a food surface or a food-contact surface.

15. The method of claim 14, wherein the food surface is that of an animal or animal
20 carcass.

16. The method of claim 15, wherein the animal carcass is bovine, porcine, equine or avian.

17. The method of claim 13, wherein the microbial collection fluid preserves microbial vitality without promoting microbial growth, allowing for determination of microbial
25 number per unit surface area.

18. The method of claim 13, wherein the microbial collection fluid promotes microbial growth, allowing for determination of a presence of absence of surface microbial organisms.

19. The apparatus of claim 1, wherein the sterilizable sample collection chamber

further comprises a diffuser tube to provide an impinger.

20. A method for rapid, high-throughput atmospheric sampling of microbial organisms, comprising:

collecting an atmospheric sample by means of an integrated collection fluid delivery and
5 collection fluid recovery member, the integrated member in communication with vacuum means; and

directing the collected atmospheric sample into an impinger comprised of a sample collection chamber having a diffuser tube, whereby atmospheric sampling of microbial organisms is, at least in part, provided.